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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,570	07/21/2003	Michiyuki Sugino	1152-0301P	4824

2292 7590 05/16/2006

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EXAMINER

MOON, SEOKYUN

ART UNIT PAPER NUMBER

2629

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/622,570	SUGINO, MICHYUKI	
	Examiner	Art Unit	
	Seokyun Moon	2629	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/21/04&4/7/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements filed on May 21, 2004 and April 07, 2006 have been acknowledged and considered by the Examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U.S. Pub. No. 2001/0024181 A1, herein after referred to as "Kubota") in view of Itakura (U.S. Pat. No. 6,727,877 B2, herein after referred to as "Itakura").

As to **claim 1**, Kubota [fig. 1] teaches a liquid crystal display including a table memory ("*graph base table 26*") for storing compensation signal data ("*brightness level to be outputted*") for compensating the input signals for the optical response characteristics of an LCD panel, in accordance with gray scale transitions from the

previous to current vertical display periods [par (0049) lines 12-18], and a gray scale determining means ("*LCD controller LSI 34*") for determining a write gray scale signal ("*appropriate signal*") to the LCD panel based on the compensation signal data (signals received from the "*I/F board 20*") [par. (0050) lines 3-9], characterized in that the table stored in the table memory ("*graph base table 26*") [fig. 7] stores each compensation signal data value corresponding to the combination of a representative gray scale level of the image signal in the current vertical display period ("*next brightness*") and that of the image signal in the previous vertical display period ("*previous brightness*").

Kubota does not teach the representative gray scale levels for each of vertical display periods to be set at varying intervals, close and dispersed intervals, depending on the optical response characteristics of the LCD panel.

However, Itakura [fig. 16] teaches a liquid crystal display device adopting a dot-inversion driving and compensating the magnitude difference between a positive polarity driving voltage and a negative polarity driving voltage for a pixel based on a table comprising representative gray scale levels being set at varying intervals, close and dispersed intervals [col. 2 lines 52-65], depending on the optical response characteristics (variations of "*field-through voltage V_p* " for each of plural gradation levels causing variations on response speed of liquid crystals) of the LCD panel [col. 10 lines 36-63 and col. 13 line 56 – col. 14 line 47].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement a dot-inversion driving in Kubota to prevent changes on liquid crystal alignments caused by driving a display with same polarity and to adopt

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Itakura's method of compensating the magnitude difference between a positive polarity driving voltage and a negative polarity driving voltage for a pixel to reduce flickers in a display screen [col. 2 lines 11-19], by introducing Itakura's compensating method into Kubota's table, and thus the modified Kubota compensates the magnitude difference between a positive driving voltage and a negative driving voltage and then overdrives the compensated voltage.

As to **claim 3**, Kubota teaches a liquid crystal display, wherein the gray scale determining means ("*LCD controller LSI 34*") determines compensation signal ("*appropriate signal*") data values corresponding to the combinations of gray scale levels between representative gray scale levels, by calculation based on the compensation signal data ("*brightness level to be outputted*") stored in the table ("*graph base table 26*") in correspondence with the combinations of representative gray scale levels [par. (0049) lines 12-18 and par. (0050) lines 3-9].

Allowable Subject Matter

5. **Claims 2 and 4** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: None of the prior arts teaches the representative gray scale levels being set at close or dispersed intervals depending on whether the optical response speed of the LCD panel is heterogeneous or homogeneous in a liquid crystal display.

Response to Arguments

6. Applicant's arguments, see page 5, filed 27 February 2006, with respect to the rejection(s) of claim(s) 1 and 3 under 35 U.S.C. 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kubota et al. (U.S. Pub. No. 2001/0024181) and Itakura (U.S. Pat. No. 6,727,877 B2).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 10, 2006 S.M.

AMR A. AWAD
PRIMARY EXAMINER
